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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/017,942      | 12/13/2001  | Bradley Paul Barber  | 37310-000178        | 1470             |

30595 7590 04/03/2003

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| EXAMINER |
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ALANKO, ANITA KAREN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 1765     | 4            |

DATE MAILED: 04/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |               |  |
|------------------------------|-----------------|---------------|--|
| <b>Office Action Summary</b> | Application No. | Applicant(s)  |  |
|                              | 10/017,942      | BARBER ET AL. |  |
|                              | Examiner        | Art Unit      |  |
|                              | Anita K Alanko  | 1765          |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-12 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All
  - b) Some \*
  - c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                           | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 . | 6) <input type="checkbox"/> Other: _____                                    |

***Claim Objections***

Claim 1 is objected to because of the following informalities: wafer is spelled incorrectly. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

Claims 6 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6, line 2 and claim 11, lines 2-3, the term “any ... location” conflicts with the recitation of the base claim that the raised ridges are located “slightly inboard from the perimeter of a desired cavity region” (claim 3, line 2). It is also unclear how the recitation of any location, any height or any width further limits the base claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kurle et al (US 6,106,735).

Kurle discloses a method of packaging electronic devices, comprising the steps of:

- providing a cap wafer 3 having a surface (Fig. 1A);

- forming raised ridges 4 on the cap wafer surface; and
- bonding (Fig. 1E), at each raised ridge, said cap wafer surface to a substrate surface 1 containing electronic devices 2.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurle et al (US 6,106,735) in view of Sasaki et al (US 2002/0017862 A1).

The discussion of Kurle from above is repeated here.

As to claim 2, Kurle does not disclose how the ridges are formed. Sasaki teaches a useful method for forming ridges appropriate for printing glass frit and bonding. Sasaki teaches to lithographically form ridges by using resist 76 (Fig.4(a) – 4(e)). It would have been obvious to one with ordinary skill in the art to lithographically form ridges in the method of Kurle because Sasaki teaches that it is a useful technique for forming ridges.

As to claims 3-4 and 9, since the modified method of Kurle discloses the same method steps as the instant invention, the same results of higher and thinner frit linewidth dimension are expected.

As to claims 5 and 10, Kurle discloses a linewidth of 500 microns (col.3, line 26), not less than 125 microns. Sasaki teaches that the linewidth may be 40 microns (page 12, paragraph

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[0285]), which is less than 125 microns. It would have been obvious to one with ordinary skill in the art to form the linewidth to less than 125 microns in the modified method of Kurle because Sasaki teaches that dimensions on the same order of magnitude are useful for bonding two plates together with glass frit. It is further obvious to one with ordinary skill in the art to apply the smallest dimensions possible, such as those suggested by Sasaki, in order to increase the density of devices on a substrate, thereby increasing yield of the final product.

As to claims 7 and 12, Kurle discloses to form a hermetic seal (col.2, lines 39-41).

As to claim 8, Sasaki teaches that a useful method for forming raised ridges includes trenching recesses into the wafer surface (Fig.3(c)); printing material 66 into said recesses and planarizing it such that each filled recess is flush with the wafer surface (Fig.3(d)); and etching away the wafer surface, except for the areas of the original recesses, so that the material forms the raised ridges that are bonded to the substrate surface (Fig.3(e)). It would have been obvious to one with ordinary skill in the art to use the method of Sasaki to form the raised ridges in the method of Kurle because Sasaki teaches that it is a useful technique for forming raised ridges to bond two substrates together with glass frit.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Garcia is cited to show a conventional method of etching and coating to form ridges.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K Alanko whose telephone number is 703-305-7708. The examiner can normally be reached on Monday-Friday, 10:00 am-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin L Utech can be reached on 703-308-3836. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9057 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

*Anita K. Alanko*  
Anita K Alanko  
Primary Examiner  
Art Unit 1765

AKA  
April 1, 2003